AIRSTAGE

AIR CONDITIONER

Wall mounted type

FUJITSU

REFRIGERANT R32

INVERTER

DESIGN & TECHNICAL MANUAL

INDOOR

ASEH07KNCA
ASEH09KNCA
ASEH12KNCA

OUTDOOR

AOEH07KNCA
AOEH09KNCA
AOEH12KNCA

FUJITSU GENERAL LIMITED

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Part 1. INDOOR UNIT

WALL MOUNTED TYPE:
ASEH07KNCA
ASEH09KNCA
ASEH12KNCA

WALL MOUNTED
ASEH07-12KNCA

1. Specifications

Type					Wall mounted		
					Inverter, Heat pump		
Model name					ASEH07KNCA	ASEH09KNCA	ASEH12KNCA
Power supply					230 V~ 50 Hz		
Power supply intake					Outdoor unit		
Available voltage range					198—264 V		
Capacity		Cooling	Rated	kW	2.0	2.5	3.4
				Btu/h	6,800	8,500	11,600
			Min.—Max.	kW	0.9—2.9	0.9—3.1	0.9—3.8
				Btu/h	3,100—9,900	3,100—10,600	3,100—13,000
		Heating	Rated	kW	2.5	2.8	3.8
				Btu/h	8,500	9,600	13,000
			Min.—Max.	kW	0.9—3.4	0.9—4.0	0.9—4.8
				Btu/h	3,100—11,600	3,100—13,600	3,100—16,400
Input power		Cooling	Rated	kW	0.5	0.74	1.05
			Min.—Max.		0.25—1.02	0.25—1.12	0.25—1.34
		Heating	Rated		0.58	0.70	1.02
			Min.—Max.		0.25—0.99	0.25—1.24	0.25—1.54
		Fan	HIGH	W	18.0	22.0	23.0
			MED		15.0	17.0	18.0
			LOW		12.0		14.0
			QUIET		8.0		
Current		Cooling	Rated	A	3.0	3.6	5.0
		Heating			3.1	3.6	5.1
Energy efficiency class		Cooling			A^{++}		
		Heating (Average)			A^{+}		
Pdesign		Cooling		kW	2.0	2.5	3.4
		Heating (Average)			2.3	2.4	2.5
SEER		Cooling		kWh/kWh	7.8	7.4	7.0
SCOP		Heating (Average)			4.4		
Annual energy consumption		QCE		kWh/a	90	118	170
		QHE (Average)			731	763	795
EER		Cooling		kW/kW	4.00	3.38	3.24
COP		Heating			4.31	4.00	3.73
Sensible capacity		Cooling		kW	1.64	2.11	2.65
Power factor		Cooling		%	72	89	91
		Heating			81	85	87
Moisture removal				L/h (pints/h)	1.0 (1.8)		1.4 (2.5)
Maximum operating current*1		Cooling		A	6.5		
		Heating			9.0		
Fan	Airflow rate	Cooling	HIGH	m^3/h	530	580	600
			MED		460	500	520
			LOW		390		440
			QUIET		250		
		Heating	HIGH		580		600
			MED		500		520
			LOW		420		440
			QUIET		280		
	Type × Qty				Crossflow fan × 1		
	Motor output			W	27		
Sound pressure level*2		Cooling	HIGH	dB (A)	36	38	40
			MED		33	35	36
			LOW		29		32
			QUIET		20		
		Heating	HIGH		38		39
			MED		33		35
			LOW		30		31
			QUIET		22		
Sound power level		Cooling	HIGH	dB (A)	51	53	55
		Heating			52		53
Heat exchanger		Dimensions (H × W × D)		mm	Main 1: 210 × 600 × 26.6 Main 2: 112 × 600 × 20		
		Fin pitch			Main 1: 1.2 Main 2: 1.1		
		Rows × Stages			Main 1: 2 × 10 Main 2: 2 × 7		
		Pipe type			Copper tube		
		Fin type			Aluminum		
Enclosure		Material			Polystyrene		
		Color			White Approximate color of Munsell N9.25/		
Dimensions (H × W × D)		Net		mm	270 × 784 × 222		
		Gross			279 × 864 × 334		
Weight		Net		kg	9.0		
		Gross			12.0		
Connection pipe		Size	Liquid	mm (in)	Ø6.35 (Ø1/4)		
			Gas		Ø9.52 (Ø3/8)		
		Method			Flare		
Drain hose		Material			Polypropylene + High-density polyethylene		
		Tip diameter		mm	Ø13.8 (I.D.), Ø15.0 to Ø16.8 (O.D.)		
Operation range		Cooling		°C	18 to 32		
				%RH	80 or less		
		Heating		°C	16 to 30		
Remote controller					Wireless (Option: Mobile app*3 [AIRSTAGE Mobile])		

WALL MOUNTED
ASEH07-12KNCA

Type	Wall mounted		
	Inverter, Heat pump		
Model name	**ASEH07KNCA**	**ASEH09KNCA**	**ASEH12KNCA**

NOTES:

- Specifications are based on the following conditions:
  - Cooling: Indoor temperature of 27°CDB/19°CWB, and outdoor temperature of 35°CDB/24°CWB.
  - Heating: Indoor temperature of 20°CDB/15°CWB, and outdoor temperature of 7°CDB/6°CWB.
  - Pipe length: 5.0 m, Height difference: 0 m. (Between outdoor unit and indoor unit.)
- Protective function might work when using it outside the operation range.
- *1: Maximum operating current is the total current of the indoor unit and the outdoor unit.
- *2: Sound pressure level:
  - Measured values in manufacturer's anechoic chamber.
  - Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.
- *3: Available on Google Play™ store or on App Store®.
- This data is based on EN 14511 standard.

WALL MOUNTED
ASEH07-12KNCA

2. Wireless LAN control

By installing mobile app on a smart device, several functions can be controlled from outside the house.

2-1. System requirement

Before using this function, prepare the following items:

- **Wireless router:**

Wireless LAN standard	IEEE802.11b/g/n
Frequency bands*	• U.S.A., Canada: 2.4 GHz (1ch—11ch) • Other countries: 2.4 GHz (1ch—13ch)
Network security standard	• Open • WEP • WPA (PSK) • WPA2 Personal (PSK) • WPS for same-LAN registration

*: Usable only in the country or region where you purchased the product.

To check whether your wireless router complies with the network security standards listed above, refer to the operation manual.

- **Smartphone:**

App-compliant operating system	iOS	Check the latest version of supported OS at Google Play store or App Store.
	Android™	

- **AIRSTAGE Mobile (mobile application):**
  Mobile app is available on Google Play store or on App Store.
  After installation of mobile app, user registration is required. For user registration and setup information, refer to Setting Manual attached with the product.

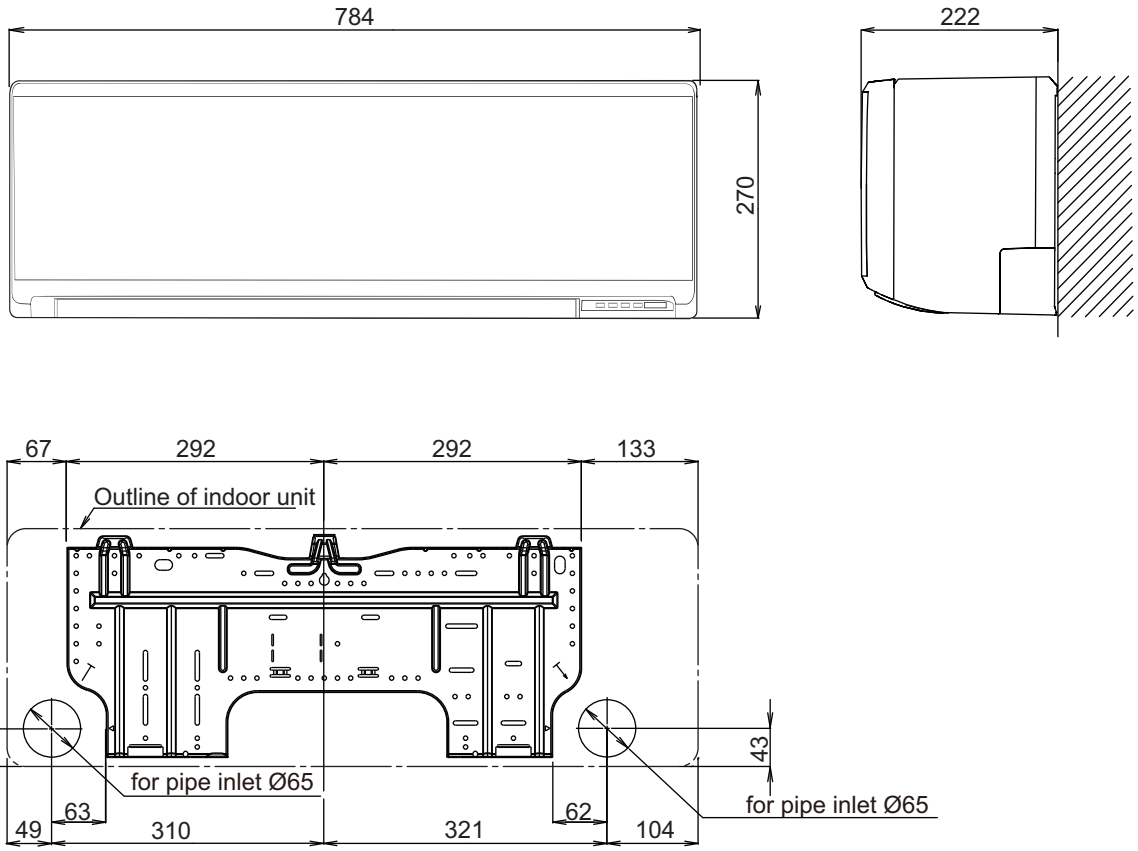
For the latest version of the wireless LAN control manuals, refer to the following web site.
https://www.fujitsu-general.com/global/support/

WALL MOUNTED
ASEH07-12KNCA

3. Dimensions

3-1. Models: ASEH07KNCA, ASEH09KNCA, and ASEH12KNCA

Unit: mm

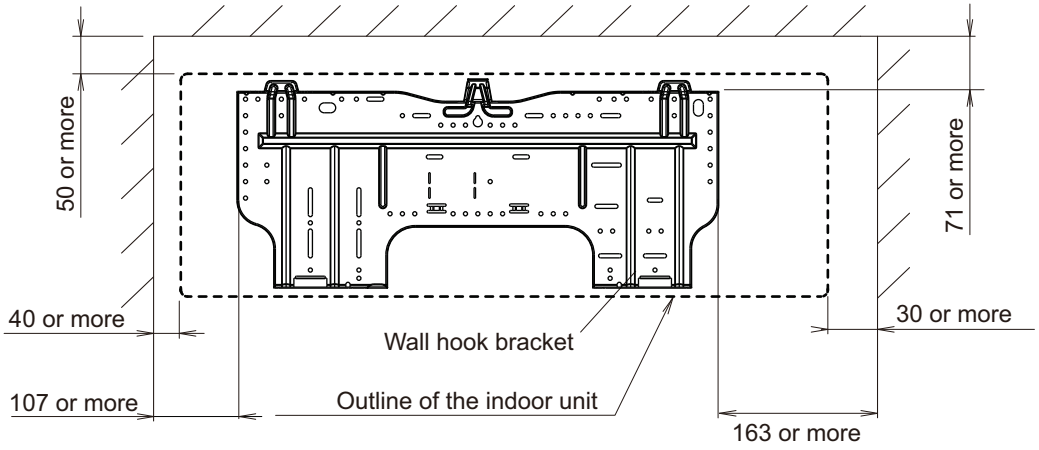


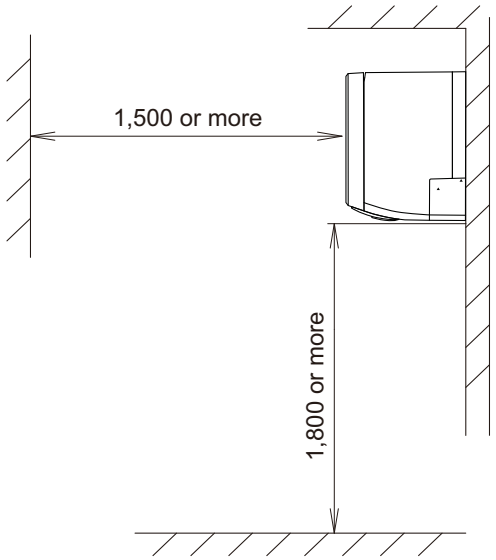
WALL MOUNTED
ASEH07-12KNCA

■ Installation space requirement

Provide sufficient installation space for product safety.

Unit: mm





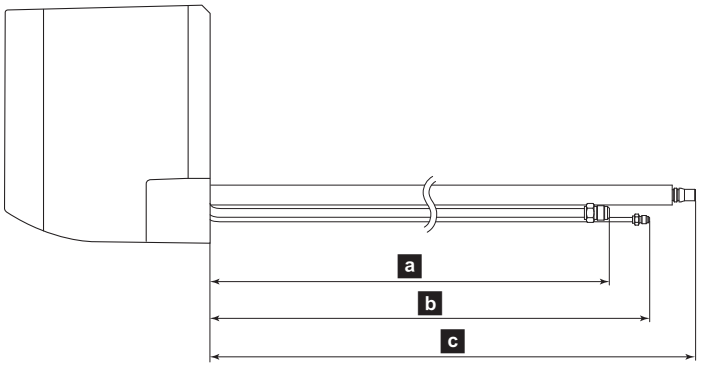
WALL MOUNTED
ASEH07-12KNCA

3-2. Pipe exit length from the rear

Design the system considering the length of the pipes or hose exiting from the rear of the indoor unit.

NOTE: Detailed shapes of the indoor unit and the tip of each pipe or hose may vary depending on the model.

Unit: mm

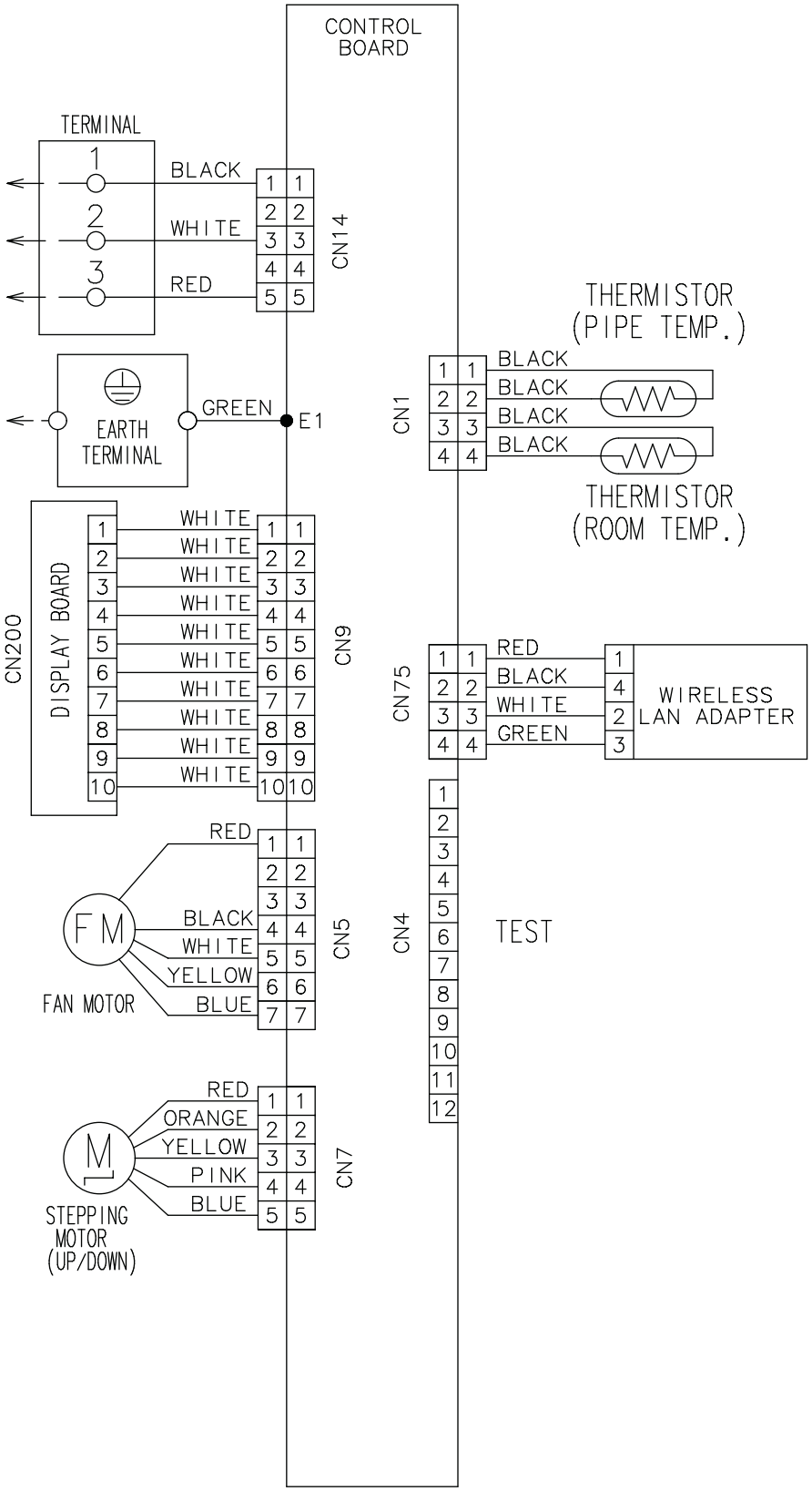


Model name	Approximate length		
	a Gas pipe	b Liquid pipe	c Drain hose
ASEH07-12KNCA	380	430	485

WALL MOUNTED
ASEH07-12KNCA

4. Wiring diagrams

4-1. Models: ASEH07KNCA, ASEH09KNCA, and ASEH12KNCA



WALL MOUNTED
ASEH07-12KNCA

5. Capacity table

Capacity tables show each of following values calculated based on the outdoor temperature and the indoor temperature, under given Airflow Rate (AFR):

For cooling capacity: Total Capacity (TC), Sensible Heat Capacity (SHC), and Input Power (IP)
For heating capacity: Total Capacity (TC) and Input Power (IP)

5-1. Cooling capacity

■ Model: ASEH07KNCA

AFR	m^3/h	530

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
		kW			kW			kW			kW			kW			kW			kW		
	-10	1.30	1.30	0.20	1.89	1.55	0.42	1.92	1.66	0.45	2.12	1.76	0.39	2.32	1.85	0.34	2.41	1.87	0.35	2.53	1.91	0.38
	0	1.32	1.32	0.20	1.92	1.57	0.42	1.95	1.68	0.44	2.15	1.77	0.38	2.35	1.87	0.33	2.44	1.89	0.35	2.57	1.92	0.37
	5	1.29	1.29	0.21	1.88	1.54	0.45	1.90	1.66	0.47	2.10	1.75	0.41	2.30	1.84	0.36	2.39	1.87	0.37	2.51	1.90	0.40
	10	1.26	1.26	0.23	1.83	1.52	0.48	1.86	1.63	0.50	2.05	1.73	0.44	2.25	1.82	0.38	2.33	1.84	0.40	2.45	1.87	0.43
	15	1.23	1.23	0.24	1.79	1.50	0.51	1.82	1.61	0.54	2.00	1.70	0.47	2.19	1.79	0.40	2.27	1.82	0.42	2.40	1.85	0.45
	20	1.50	1.43	0.23	2.01	1.58	0.32	2.07	1.70	0.32	2.21	1.69	0.33	2.33	1.84	0.33	2.44	1.81	0.33	2.66	1.91	0.34
	25	1.43	1.38	0.27	1.91	1.52	0.38	1.98	1.64	0.38	2.10	1.63	0.38	2.22	1.78	0.39	2.33	1.74	0.39	2.54	1.84	0.39
	30	1.36	1.32	0.31	1.82	1.46	0.43	1.88	1.58	0.44	2.00	1.56	0.44	2.11	1.71	0.44	2.21	1.67	0.45	2.41	1.77	0.45
	35	1.29	1.27	0.35	1.72	1.40	0.49	1.78	1.51	0.49	1.90	1.50	0.50	2.00	1.64	0.50	2.10	1.60	0.50	2.29	1.69	0.51
	40	1.22	1.22	0.36	1.62	1.44	0.52	1.72	1.55	0.52	1.81	1.54	0.52	1.89	1.68	0.52	2.01	1.64	0.52	2.16	1.74	0.52
	45	1.13	1.13	0.39	1.50	1.40	0.56	1.59	1.51	0.56	1.68	1.49	0.56	1.75	1.63	0.56	1.86	1.60	0.56	2.00	1.69	0.56
	50	0.99	0.99	0.42	1.32	1.32	0.58	1.40	1.40	0.58	1.48	1.48	0.58	1.55	1.55	0.58	1.64	1.64	0.58	1.77	1.77	0.58

■ Model: ASEH09KNCA

AFR	m^3/h	580

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
		kW			kW			kW			kW			kW			kW			kW		
	-10	1.54	1.54	0.39	2.25	1.88	0.82	2.28	2.01	0.87	2.52	2.12	0.76	2.75	2.24	0.66	2.85	2.27	0.69	3.01	2.31	0.73
	0	1.62	1.62	0.35	2.36	1.92	0.74	2.39	2.06	0.78	2.64	2.18	0.69	2.89	2.29	0.59	3.00	2.32	0.62	3.16	2.36	0.66
	5	1.59	1.59	0.37	2.31	1.90	0.78	2.35	2.04	0.82	2.59	2.16	0.72	2.84	2.27	0.62	2.94	2.30	0.65	3.10	2.34	0.70
	10	1.56	1.56	0.39	2.27	1.88	0.82	2.30	2.02	0.87	2.54	2.13	0.76	2.78	2.25	0.66	2.88	2.28	0.69	3.04	2.32	0.73
	15	1.53	1.53	0.41	2.22	1.86	0.86	2.26	2.00	0.91	2.49	2.11	0.80	2.72	2.22	0.69	2.82	2.25	0.72	2.97	2.29	0.77
	20	1.87	1.78	0.37	2.51	1.97	0.52	2.59	2.12	0.52	2.76	2.10	0.53	2.91	2.29	0.53	3.05	2.25	0.54	3.33	2.37	0.54
	25	1.78	1.73	0.42	2.39	1.91	0.59	2.47	2.06	0.59	2.63	2.05	0.60	2.77	2.23	0.60	2.91	2.19	0.60	3.17	2.31	0.61
	30	1.69	1.68	0.47	2.27	1.86	0.65	2.35	2.00	0.66	2.50	1.99	0.66	2.64	2.17	0.67	2.77	2.13	0.67	3.02	2.25	0.68
	35	1.61	1.61	0.52	2.15	1.81	0.72	2.23	1.95	0.73	2.37	1.93	0.73	2.50	2.11	0.74	2.62	2.06	0.74	2.86	2.18	0.76
	40	1.54	1.54	0.56	2.05	1.80	0.81	2.17	1.94	0.81	2.30	1.92	0.81	2.40	2.10	0.81	2.54	2.05	0.81	2.74	2.17	0.81
	45	1.43	1.43	0.61	1.90	1.74	0.87	2.01	1.87	0.87	2.13	1.85	0.87	2.22	2.02	0.87	2.35	1.98	0.87	2.54	2.09	0.87
	50	1.16	1.16	0.65	1.66	1.66	0.78	1.76	1.76	0.78	1.86	1.86	0.78	1.94	1.94	0.78	2.06	2.06	0.78	2.22	2.22	0.78

■ Model: ASEH12KNCA

AFR	m^3/h	600

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
		kW			kW			kW			kW			kW			kW			kW		
	-10	1.85	1.85	0.36	2.69	2.18	0.75	2.73	2.33	0.80	3.02	2.46	0.70	3.30	2.60	0.60	3.42	2.63	0.63	3.61	2.67	0.67
	0	1.79	1.79	0.39	2.60	2.13	0.82	2.64	2.29	0.86	2.92	2.42	0.76	3.19	2.55	0.65	3.31	2.58	0.68	3.48	2.62	0.73
	5	1.88	1.88	0.33	2.73	2.19	0.70	2.77	2.34	0.74	3.06	2.48	0.65	3.34	2.61	0.56	3.47	2.64	0.59	3.65	2.69	0.63
	10	1.96	1.96	0.28	2.85	2.24	0.59	2.90	2.40	0.62	3.20	2.54	0.54	3.50	2.67	0.47	3.63	2.71	0.49	3.82	2.76	0.52
	15	2.05	2.05	0.37	2.98	2.29	0.78	3.03	2.46	0.82	3.34	2.60	0.72	3.66	2.74	0.62	3.79	2.77	0.65	3.99	2.82	0.70
	20	2.45	2.17	0.54	3.29	2.40	0.75	3.40	2.59	0.76	3.62	2.57	0.77	3.82	2.80	0.77	4.00	2.74	0.78	4.37	2.90	0.79
	25	2.36	2.14	0.61	3.17	2.36	0.84	3.28	2.54	0.85	3.49	2.52	0.86	3.68	2.75	0.87	3.86	2.69	0.87	4.21	2.85	0.88
	30	2.27	2.10	0.67	3.05	2.32	0.93	3.15	2.50	0.94	3.36	2.48	0.95	3.54	2.70	0.96	3.71	2.65	0.96	4.05	2.80	0.98
	35	2.19	2.06	0.73	2.93	2.27	1.02	3.03	2.45	1.03	3.22	2.43	1.04	3.40	2.65	1.05	3.57	2.60	1.05	3.89	2.74	1.08
	40	2.01	1.94	0.77	2.67	2.14	1.10	2.83	2.31	1.10	2.99	2.29	1.10	3.13	2.50	1.10	3.32	2.45	1.10	3.57	2.58	1.10
	45	1.74	1.74	0.78	2.32	1.98	1.11	2.46	2.14	1.11	2.60	2.12	1.11	2.71	2.31	1.11	2.88	2.26	1.11	3.10	2.39	1.11
	50	1.44	1.44	0.77	1.58	1.58	0.78	1.67	1.67	0.78	1.76	1.76	0.78	1.84	1.84	0.78	1.95	1.95	0.78	2.11	2.11	0.78

WALL MOUNTED
ASEH07-12KNCA

5-2. Heating capacity

NOTE: Values mentioned in the table are calculated based on the maximum capacity.

■ Model: ASEH07KNCA

AFR	m^3/h	580

			Indoor temperature									
			16		18		20		22		24	
	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
			kW		kW		kW		kW		kW	
Outdoor temperature	-15	-16	1.96	0.87	1.96	0.88	1.96	0.88	1.92	0.91	1.88	0.93
	-10	-11	2.45	0.92	2.43	0.93	2.38	0.93	2.33	0.96	2.28	0.98
	-5	-7	2.94	0.96	2.91	0.97	2.80	0.98	2.74	1.01	2.68	1.03
	0	-2	3.36	1.00	3.32	1.02	3.21	1.06	3.08	1.06	3.01	1.08
	5	3	3.38	0.91	3.32	0.93	3.24	0.99	3.06	0.97	2.99	0.99
	7	6	3.54	0.91	3.48	0.93	3.40	0.99	3.21	0.97	3.13	0.99
	10	8	3.71	0.92	3.65	0.94	3.56	1.00	3.36	0.98	3.29	1.00
	15	10	3.88	0.92	3.82	0.95	3.72	1.00	3.51	0.98	3.43	1.00
	20	15	4.31	0.93	4.24	0.96	4.13	1.01	3.90	0.99	3.69	0.91
	24	18	4.55	0.94	4.47	0.97	4.36	1.02	4.12	1.00	3.79	0.86

■ Model: ASEH09KNCA

AFR	m^3/h	580

			Indoor temperature									
			16		18		20		22		24	
	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
			kW		kW		kW		kW		kW	
Outdoor temperature	-15	-16	2.11	0.94	2.11	0.95	2.11	0.95	2.07	0.98	2.03	1.00
	-10	-11	2.60	0.97	2.59	0.99	2.53	0.99	2.48	1.02	2.43	1.04
	-5	-7	3.10	1.01	3.06	1.03	2.95	1.04	2.89	1.06	2.82	1.09
	0	-2	3.52	1.05	3.47	1.07	3.36	1.11	3.23	1.11	3.16	1.13
	5	3	3.93	1.09	3.87	1.11	3.77	1.18	3.56	1.16	3.48	1.18
	7	6	4.14	1.13	4.07	1.16	4.00	1.24	3.78	1.21	3.69	1.24
	10	8	4.44	1.18	4.36	1.21	4.28	1.30	4.04	1.27	3.95	1.30
	15	10	4.27	1.05	4.20	1.08	4.12	1.16	3.90	1.13	3.81	1.16
	20	15	5.01	1.25	4.92	1.25	4.65	1.24	4.47	1.21	4.16	1.11
	24	18	5.13	1.25	5.04	1.25	4.73	1.19	4.43	1.10	4.12	1.00

■ Model: ASEH12KNCA

AFR	m^3/h	600

			Indoor temperature									
			16		18		20		22		24	
	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
			kW		kW		kW		kW		kW	
Outdoor temperature	-15	-16	2.60	1.07	2.60	1.08	2.60	1.08	2.55	1.11	2.50	1.14
	-10	-11	3.16	1.14	3.14	1.16	3.07	1.17	3.01	1.20	2.94	1.23
	-5	-7	3.71	1.22	3.67	1.24	3.53	1.25	3.46	1.28	3.39	1.31
	0	-2	4.27	1.29	4.21	1.32	4.08	1.37	3.92	1.37	3.83	1.40
	5	3	4.83	1.36	4.75	1.40	4.63	1.48	4.37	1.45	4.27	1.48
	7	6	4.97	1.40	4.88	1.44	4.80	1.54	4.63	1.46	4.46	1.44
	10	8	5.38	1.43	5.28	1.48	5.25	1.61	4.70	1.37	4.52	1.36
	15	10	5.25	1.31	5.15	1.29	5.12	1.40	4.70	1.25	4.51	1.23
	20	15	5.28	1.18	5.18	1.16	4.90	1.15	4.71	1.12	4.38	1.03
	24	18	5.46	1.16	5.36	1.16	5.03	1.10	4.71	1.02	4.38	0.93

WALL MOUNTED
ASEH07-12KNCA

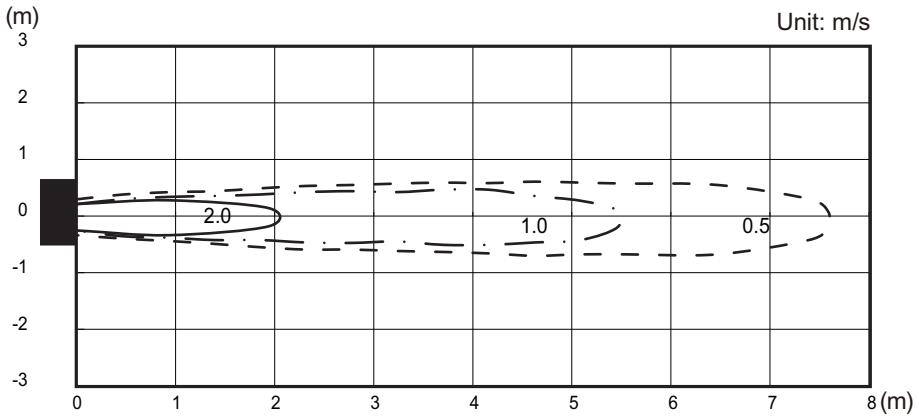
6. Fan performance

6-1. Air velocity distributions

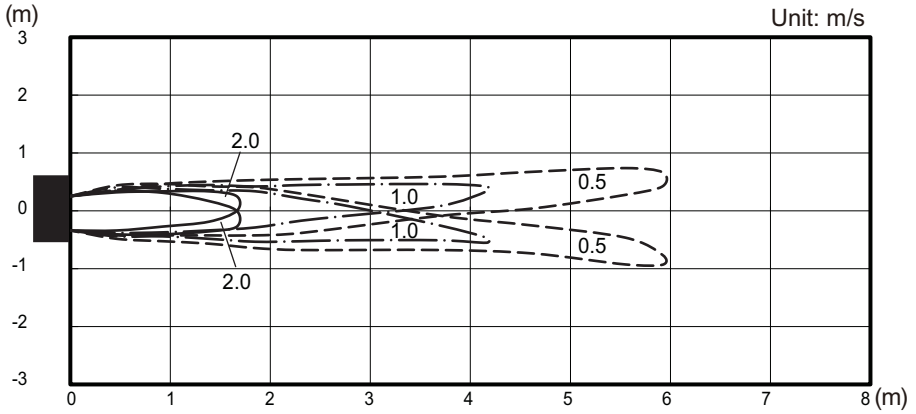
■ Model: ASEH07KNCA

Measuring conditions	Fan speed	Operation mode
	HIGH	FAN

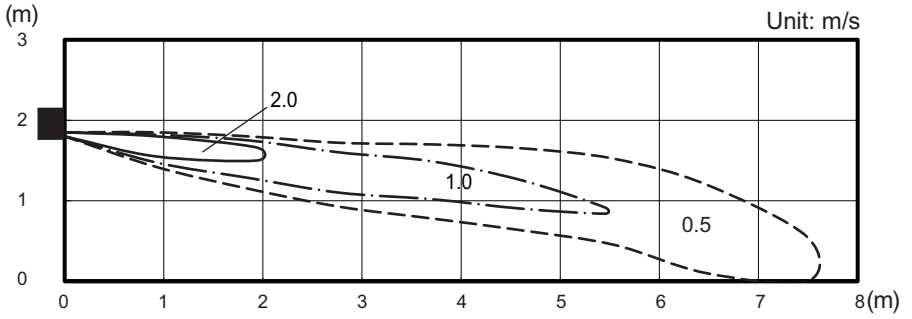
Top view
Horizontal louver: Up
Vertical louver: Center



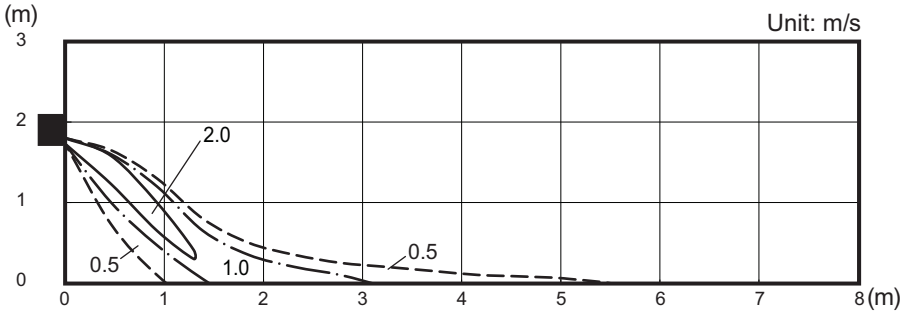
Top view
Horizontal louver: Up
Vertical louver: Left & Right



Side view
Horizontal louver: Up
Vertical louver: Center



Side view
Horizontal louver: Down
Vertical louver: Center

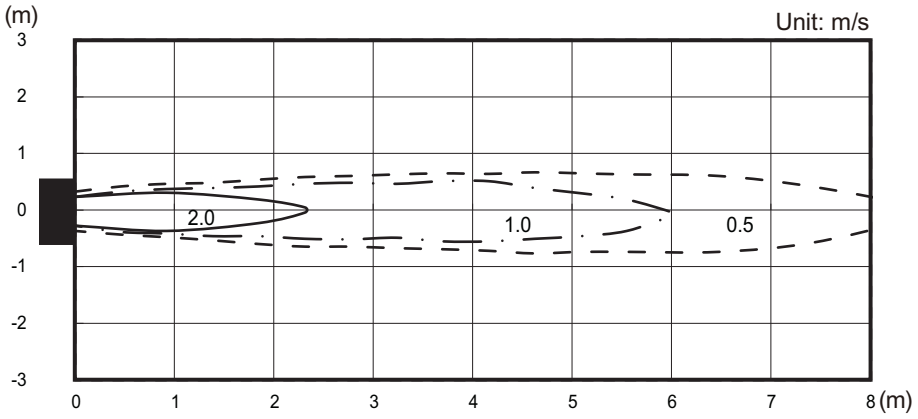


WALL MOUNTED
ASEH07-12KNCA

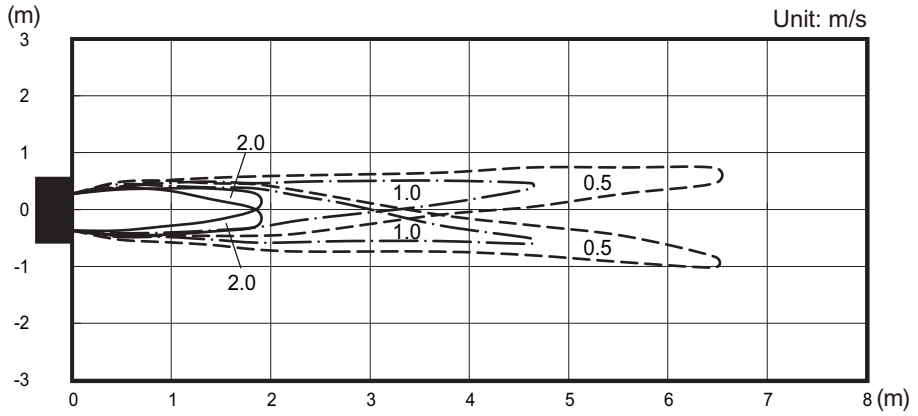
■ Models: ASEH09KNCA and ASEH12KNCA

Measuring conditions	Fan speed	Operation mode
	HIGH	FAN

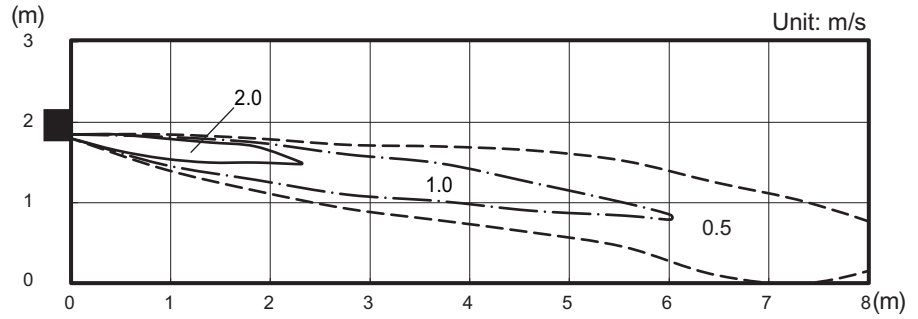
Top view
Horizontal louver: Up
Vertical louver: Center



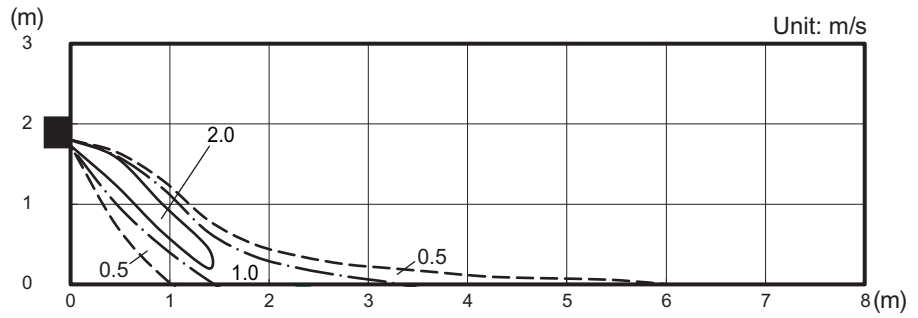
Top view
Horizontal louver: Up
Vertical louver: Left & Right



Side view
Horizontal louver: Up
Vertical louver: Center



Side view
Horizontal louver: Down
Vertical louver: Center



WALL MOUNTED
ASEH07-12KNCA

6-2. Airflow

■ Model: ASEH07KNCA

● Cooling

Fan speed	Airflow	
HIGH	m^3/h	530
	l/s	147
	CFM	312
MED	m^3/h	460
	l/s	128
	CFM	271
LOW	m^3/h	390
	l/s	108
	CFM	230
QUIET	m^3/h	250
	l/s	69
	CFM	147

● Heating

Fan speed	Airflow	
HIGH	m^3/h	580
	l/s	161
	CFM	341
MED	m^3/h	500
	l/s	139
	CFM	294
LOW	m^3/h	420
	l/s	117
	CFM	247
QUIET	m^3/h	280
	l/s	78
	CFM	165

WALL MOUNTED
ASEH07-12KNCA

■ Model: ASEH09KNCA

● Cooling

Fan speed	Airflow	
HIGH	m^3/h	580
	l/s	161
	CFM	341
MED	m^3/h	500
	l/s	139
	CFM	294
LOW	m^3/h	390
	l/s	108
	CFM	230
QUIET	m^3/h	250
	l/s	69
	CFM	147

● Heating

Fan speed	Airflow	
HIGH	m^3/h	580
	l/s	161
	CFM	341
MED	m^3/h	500
	l/s	139
	CFM	294
LOW	m^3/h	420
	l/s	117
	CFM	247
QUIET	m^3/h	280
	l/s	78
	CFM	165

WALL MOUNTED
ASEH07-12KNCA

■ Model: ASEH12KNCA

● Cooling

Fan speed	Airflow	
HIGH	m^3/h	600
	l/s	167
	CFM	353
MED	m^3/h	520
	l/s	144
	CFM	306
LOW	m^3/h	440
	l/s	122
	CFM	259
QUIET	m^3/h	250
	l/s	69
	CFM	147

● Heating

Fan speed	Airflow	
HIGH	m^3/h	600
	l/s	167
	CFM	353
MED	m^3/h	520
	l/s	144
	CFM	306
LOW	m^3/h	440
	l/s	122
	CFM	259
QUIET	m^3/h	280
	l/s	78
	CFM	165

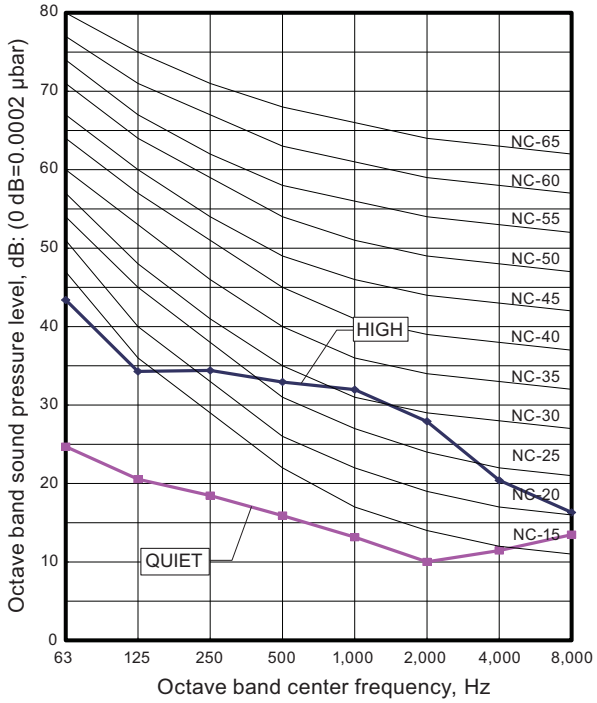
WALL MOUNTED
ASEH07-12KNCA

7. Operation noise (sound pressure)

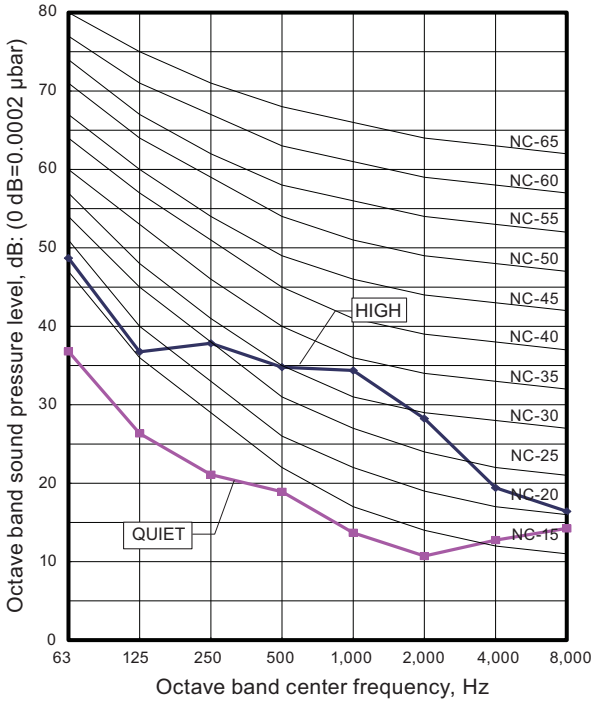
7-1. Noise level curve

■ Model: ASEH07KNCA

● Cooling

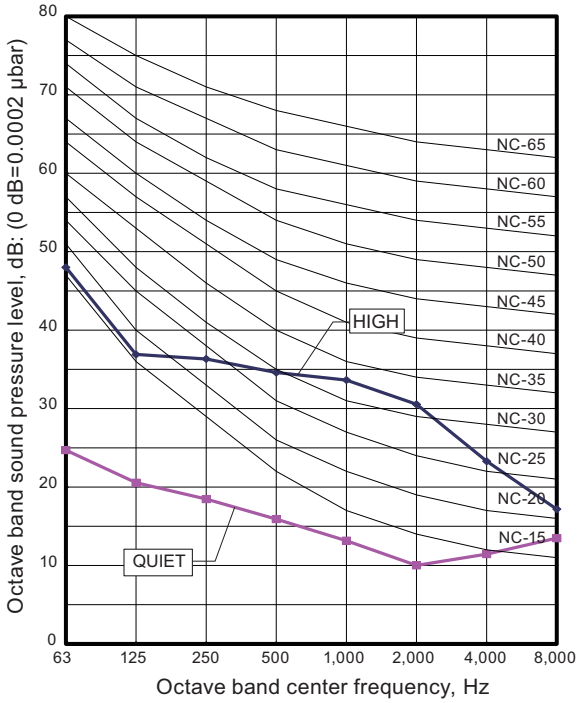


● Heating

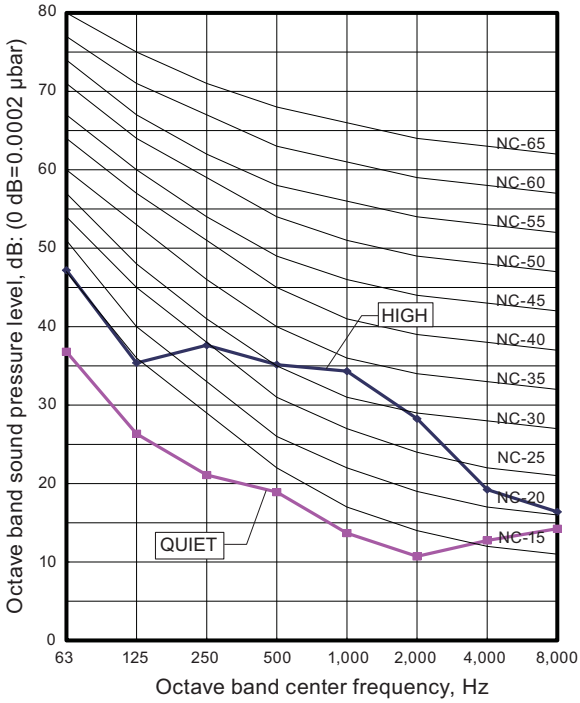


■ Model: ASEH09KNCA

● Cooling



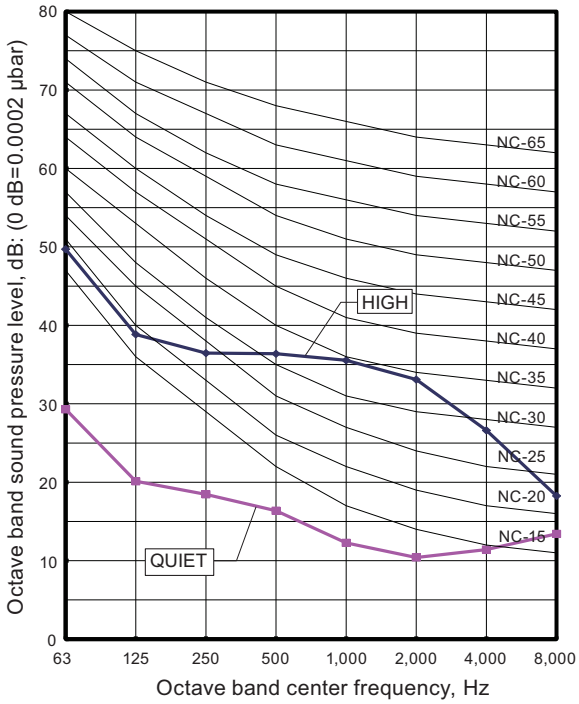
● Heating



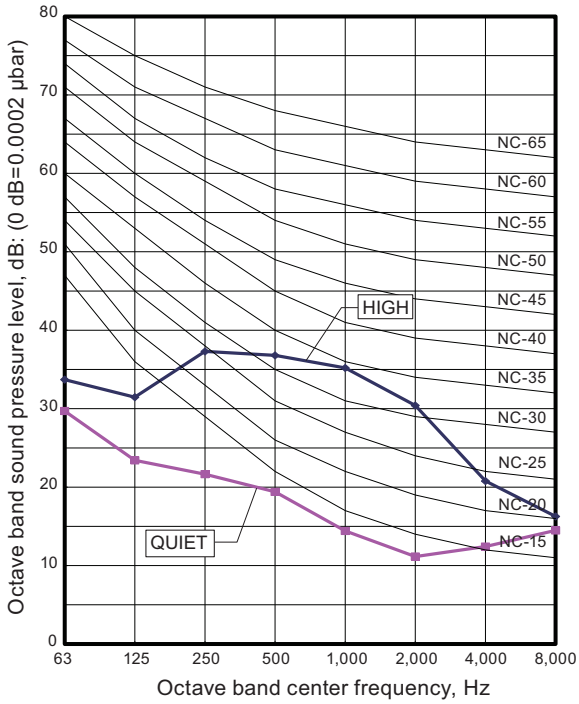
WALL MOUNTED
ASEH07-12KNCA

■ Model: ASEH12KNCA

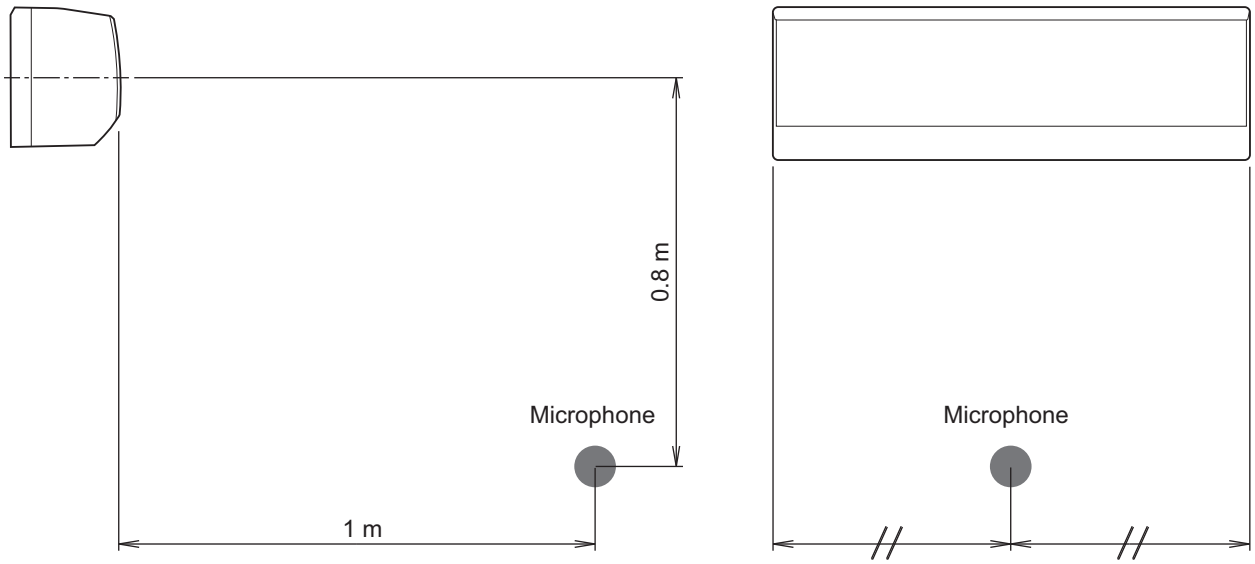
● Cooling



● Heating



7-2. Sound level check point



NOTE: Detailed shape of the actual indoor unit might be slightly different from the one illustrated above.

WALL MOUNTED
ASEH07-12KNCA

8. Safety devices

Type of protection	Protection form		Model		
			ASEH07KNCA	ASEH09KNCA	ASEH12KNCA
Circuit protection	Current fuse (PCB*)		250 V, 3.15 A		
Fan motor protection	Thermistor protection	Activate	More than 170°C Fan motor stop		
		Reset	145°C or less Fan motor restart		

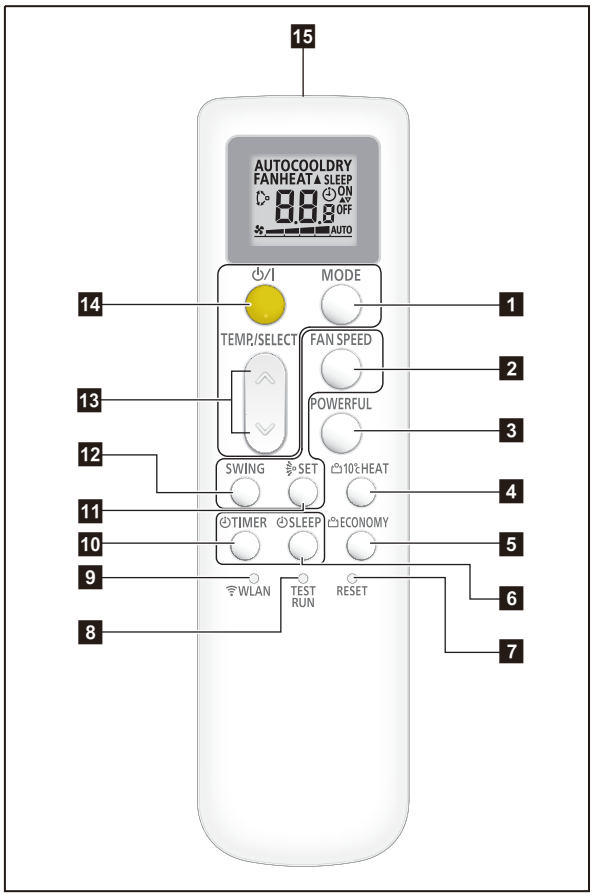
*PCB: Printed Circuit Board

WALL MOUNTED
ASEH07-12KNCA

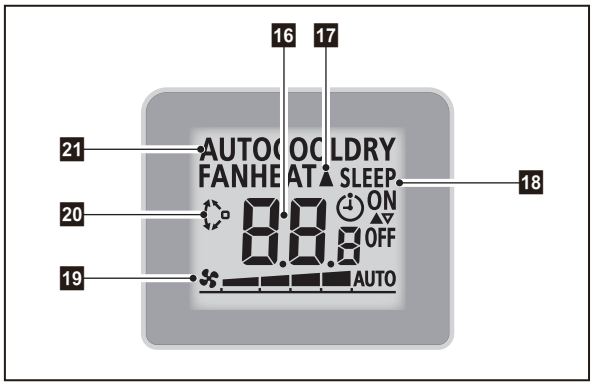
9. Remote controller

9-1. Wireless remote controller

■ Overview



Display panel



NOTES:

- Functions may differ by type of the indoor unit. For details, refer to the operation manual.
- This figure depicts all indicators that the remote controller can display on the screen for the functional explanation.
  In actual operation, the remote controller shows only the indicators that are appropriate for the current process.

1 MODE button

- Switches operation mode (AUTO, COOL, DRY, FAN, and HEAT).
- Starts/ends the remote controller custom code (max. 4 types) change.

2 FAN SPEED button

- Press the FAN SPEED button while the air conditioner is operating, to control fan speed.

3 POWERFUL button

4 10 °C HEAT button

5 ECONOMY button

6 SLEEP TIMER button

7 RESET button

8 TEST RUN button

- Used only when installing the air conditioner, and should not be used under normal conditions, as it will cause the indoor unit's thermostat malfunction.
- If this button is pressed during normal operation, the indoor unit will switch to test operation mode, and the operation indicator lamp and the timer indicator lamp on the indoor unit will begin to flash simultaneously.
- To stop the test operation mode, press the START/STOP button. Then, the air conditioner stops the operation.

NOTE: If the service check mode starts unintentionally and "- -" appears on the remote controller display, press the START/STOP button to end this operation.

9 WLAN button

- Starts the wireless LAN setting.

10 TIMER button

11 SET button (Up/down airflow)

12 SWING button

13 TEMP./SELECT button

- Adjusts the setting temperature.
- Adjusts the value of the timer settings.
- Sets the remote controller code.

14 START/STOP button

15 Signal transmitter

16 Temperature and time indicator

- Displays set temperature.
- In timer setting, it displays the timer time. After finishing the timer setting, set temperature will reappear.

17 Signal transmit indicator

18 Timer mode indicator

19 Fan speed indicator

20 Swing indicator

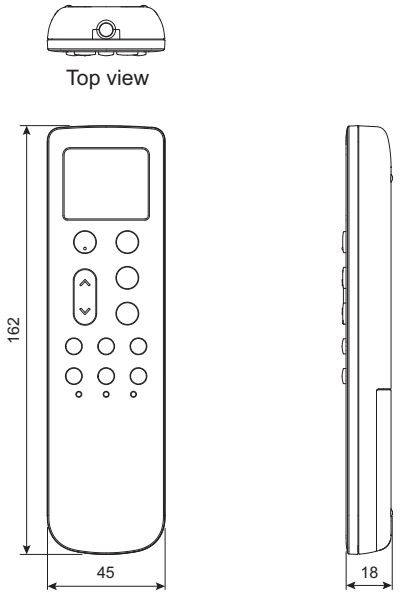
21 Operating mode indicator

WALL MOUNTED
ASEH07-12KNCA

■ Specifications

● Controller

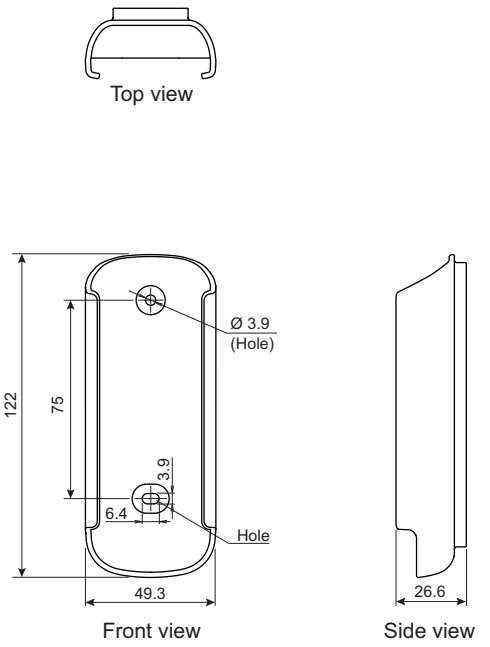
Unit: mm



Size (H × W × D)	mm	162 × 45 × 18
Weight	g	65.5 (without batteries)

● Holder

Unit: mm



Size (H × W × D)	mm	122 × 49.3 × 26.6
Weight	g	23.5

WALL MOUNTED
ASEH07-12KNCA

10. Function settings

To adjust the functions of this product according to the installation environment, various types of function settings are available.

NOTE: Incorrect settings can cause a product malfunction.

10-1. Function settings by using remote controller

Some function settings can be changed on the remote controller. After confirming the setting procedure and the content of each function setting, select appropriate functions for your installation environment.

■ Setting procedure by using wireless remote controller

The function number and the associated setting value are displayed on the LCD of the remote controller. Follow the instructions written in the local setup procedure supplied with the remote controller, and select appropriate setting according to the installation environment.

Before connecting the power supply of the indoor unit, reconfirm following items:

- Piping air tight test and vacuuming have been performed firmly.
- There is no wiring mistake.

Then, connect the power supply of the indoor unit.

Entering function setting mode:

While pressing the FAN SPEED button and TEMP./SELECT (∧) button simultaneously, press the RESET button to enter the function setting mode.

STEP 1: Setting the remote controller custom code

Use the following steps to select the custom code of the remote controller. (The signal is correctly sent and received only when the custom codes of the air conditioner and the remote controller match.)

The custom codes that are set through this process are applicable only to the signal in the function setting.

For details on how to set the custom codes through the normal process, refer to "Custom code setting for wireless remote controller" on page 26.

1. Press the TEMP./SELECT (∧) (∨) buttons to change the custom code between A →b →c →d. Match the code on the display to the air conditioner custom code. (Initially set to A.) If the custom code does not need to be selected, press the MODE button, and proceed to **STEP 2**.
2. Press the MODE button to accept the custom code, and proceed to **STEP 2**.

NOTES:

- The air conditioner custom code is set to A prior to shipment.
- The remote controller resets to custom code A when the batteries on the remote controller are replaced. If you use a custom code other than code A, reset the custom code after replacing the batteries.
- If you do not know the air conditioner custom code setting, try each of the custom codes (A →b →c →d) until you find the code that operates the air conditioner.

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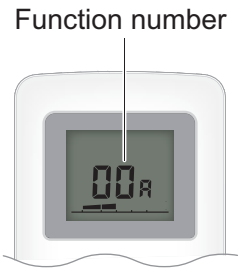
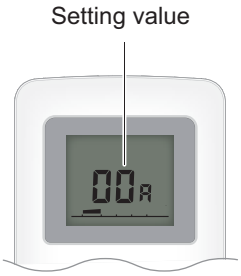
STEP 2: Selecting the function number and setting value

1. Press the TEMP./SELECT (∧) (∨) buttons to select the function number. To switch between the left and right digits, press the MODE button.
2. Press the FAN SPEED button to proceed the setting value. To return the function number selection, press the FAN SPEED button again.



3. Press the TEMP./SELECT (∧) (∨) buttons to select the setting value. To switch between the left and right digits, press the MODE button.
4. Press the TIMER button, and ⏻/I (START/STOP) button, in the order listed to confirm the settings.
5. Press the RESET button to cancel the function setting mode.
6. After completing the function setting, be sure to disconnect the power supply and then reconnect it.



⚠ CAUTION

After disconnecting the power supply, wait 30 seconds or more before reconnecting it. The function setting will not become active unless the power supply is disconnected and then reconnected.

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■ Contents of function setting

Each function setting listed in this section is adjustable in accordance with the installation environment.

NOTE: Setting will not be changed if invalid numbers or setting values are selected.

● Function setting list

	Function no.	Functions
1)	11	Filter sign
2)	30/31	Room temperature control for indoor unit sensor
3)	40	Auto restart
4)	44	Remote controller custom code
5)	49	Indoor unit fan control for energy saving for cooling

1) Filter sign

Select appropriate intervals for displaying the filter sign on the indoor unit according to the estimated amount of dust in the air of the room.

If the indication is not required, select "No indication" (03).

Function number	Setting value	Setting description	Factory setting
11	00	Standard (400 hours)	
	01	Long interval (1,000 hours)	
	02	Short interval (200 hours)	
	03	No indication	♦

WALL MOUNTED
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2) Room temperature control for indoor unit sensor

Depending on the installed environment, correction of the room temperature sensor may be required. Select the appropriate control setting according to the installed environment.

The temperature of the room temperature sensor is corrected as follows:

Corrected temp. = Temp. of the room temp. sensor - Correction temp. value

Example of correction:

When the temperature of the room temp. sensor is 26°C and the setting value is “03” (-1.0°C), corrected temp. will be 27°C (26°C - [-1.0°C]).

The temperature correction values show the difference from the Standard setting "00" (manufacturer’s recommended value).

Function number		Setting value	Setting description		Factory setting
30 (For cooling)	31 (For heating)	00	Standard setting		♦
		01	No correction 0.0°C		
		02	-0.5°C	More cooling Less heating	
		03	-1.0°C		
		04	-1.5°C		
		05	-2.0°C		
		06	-2.5°C		
		07	-3.0°C		
		08	-3.5°C		
		09	-4.0°C		
		10	+0.5°C	Less cooling More heating	
		11	+1.0°C		
		12	+1.5°C		
		13	+2.0°C		
		14	+2.5°C		
		15	+3.0°C		
		16	+3.5°C		
		17	+4.0°C		

3) Auto restart

Enables or disables automatic restart after a power interruption.

Function number	Setting value	Setting description	Factory setting
40	00	Enable	♦
	01	Disable	

NOTE: Auto restart is an emergency function such as for power outage etc. Do not attempt to use this function in normal operation. Be sure to operate the unit by remote controller or external device.

4) Remote controller custom code

(Only for wireless remote controller)

The indoor unit custom code can be changed. Select the appropriate custom code.

Function number	Setting value	Setting description	Factory setting
44	00	A	♦
	01	B	
	02	C	
	03	D	

WALL MOUNTED
ASEH07-12KNCA

5) Indoor unit fan control for energy saving for cooling

Enables or disables the power-saving function by controlling the indoor unit fan rotation when the outdoor unit is stopped during cooling operation.

Function number	Setting value	Setting description	Factory setting
49	00	Disable	
	01	Enable	
	02	Remote controller	♦

00: When the outdoor unit is stopped, the indoor unit fan operates continuously following the setting on the remote controller.

01: When the outdoor unit is stopped, the indoor unit fan operates intermittently at a very low speed.

02: Enable or disable this function by remote controller setting.

NOTE: Set to "00" or "01" when connecting a remote controller that cannot set the Fan control for energy saving function or connecting a network converter. To confirm if the remote controller has this setting, refer to the operating manual of each remote controller.

WALL MOUNTED
ASEH07-12KNCA

10-2. Custom code setting for wireless remote controller

To interconnect the air conditioner and the wireless remote controller, assignment of the custom code for the wireless remote controller is required.

NOTE: Air conditioner cannot receive a signal if the air conditioner has not been set for the custom code.

When 2 or more air conditioners are installed in a room, and the remote controller is operating an air conditioner other than the one you wish to set, change the custom code of the remote controller to operate only the air conditioner you wish to set. (4 selections possible.)

Confirm the setting of the remote controller custom code and the function setting. If these do not match, the remote controller cannot be used to operate for the air conditioner.

1. Press the ⏻/I (START/STOP) button until the indicators on the remote controller turn off.
2. Press the MODE button for at least 5 seconds to display the current custom code. (Initially set to A.)
3. Press the TEMP./SELECT (∧) (∨) buttons to change the custom code between A →b →c →d. Match the code on the display to the air conditioner custom code. (Initially set to A.)
4. Press the MODE button again to return to the original display. The custom code will be changed.

NOTES:

- If no button is pressed within 30 seconds after the custom code is displayed, the system returns to the original display. In this case, start again from step 1.
- The air conditioner custom code is set to A prior to shipment. To change the custom code, contact your retailer.
- If you do not know the assigned code for the air conditioner, try each of the custom code (A →b →c →d) until you find the code which operates the air conditioner.

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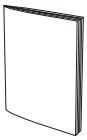
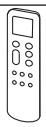
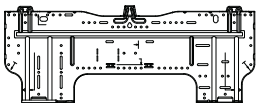
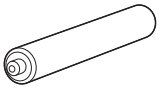
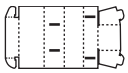
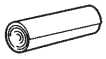
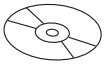
ASEH07-12KNCA

11. Accessories

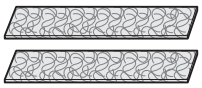
11-1. Models: ASEH07KNCA, ASEH09KNCA, and ASEH12KNCA

Part name	Exterior	Qty	Part name	Exterior	Qty
Operation manual		1	Self-tapping screw (Large)		5
Installation manual		1	Self-tapping screw (Small)		2
Remote controller		1	Wall hook bracket		1
Battery		2	Remote controller holder		1
Installation spacer		1	Cloth tape		1
Operation manual (CD-ROM)		1			

WALL MOUNTED
ASEH07-12KNCA

12. Optional parts

12-1. Others

Exterior	Part name	Model name	Summary
	Air Cleaning Filter	UTR-FA16-5	Air Cleaning Filter can be mounted to the indoor unit.

Part 2. OUTDOOR UNIT

SINGLE TYPE:

AOEH07KNCA
AOEH09KNCA
AOEH12KNCA

OUTDOOR UNIT
AOEH07-12KNCA

1. Specifications

Type				Inverter, Heat pump		
Model name				**AOEH07KNCA**	**AOEH09KNCA**	**AOEH12KNCA**
Power supply				230 V~ 50 Hz		
Power supply intake				Outdoor unit		
Available voltage range				198—264 V		
Starting current			A	3.1	3.6	5.1
Fan	Airflow rate	Cooling	m^3/h	1,430		1,460
		Heating		1,390		1,360
	Type × Qty			Propeller fan × 1		
	Motor output		W	23		
Sound pressure level*		Cooling	dB (A)	43	44	49
		Heating		44	45	49
Sound power level		Cooling	dB (A)	53	56	60
		Heating		54	56	61
Heat exchanger type		Dimensions (H × W × D)	mm	504 × 650 × 18.2		504 × 630 × 36.4
		Fin pitch	FPI	1.3		
		Rows × Stages		1 × 24		2 × 24
		Pipe type		Copper tube		
		Fin type	Type (Material)	Aluminum		
			Surface treatment	Blue fin		
Compressor		Type		DC rotary		
		Motor output	W	538		615
Refrigerant		Type (Global warming potential)		R32 (675)		
		Charge	g	570		650
Refrigerant oil		Type		VG74		
		Amount	cm^3	240		
Enclosure		Material		Steel sheet		
		Color		Beige Approximate color of Munsell 10YR 7.5/1.0		
Dimensions (H × W × D)		Net	mm	541 × 663 × 290		
		Gross		596 × 798 × 369		
Weight		Net	kg	22		24
		Gross		24		27
Connection pipe	Size	Liquid	mm (in)	Ø6.35 (Ø1/4)		
		Gas		Ø9.52 (Ø3/8)		
	Method			Flare		
	Pre-charge length		m	15		
	Max. length			20		
	Max. height difference			15		
Operation range		Cooling	°C	-10 to 50		
		Heating		-15 to 24		
Drain hose		Material		Polypropylene		
		Tip diameter	mm	φ13.0(I.D.), φ16.0 to φ16.8(O.D.)		

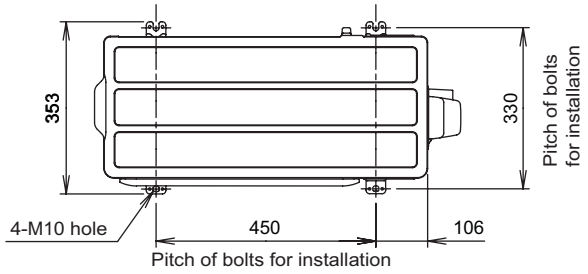
NOTES:

- Specifications are based on the following conditions:
  - Cooling: Indoor temperature of 27°CDB/19°CWB, and outdoor temperature of 35°CDB/24°CWB.
  - Heating: Indoor temperature of 20°CDB/ 15°CWB, and outdoor temperature of 7°CDB)/6°CWB).
  - Pipe length: 5 m, Height difference: 0 m. (Between outdoor unit and indoor unit.)
- Protective function might work when using it outside the operation range.
- *: Sound pressure level
  - Measured values in manufacturer's anechoic chamber.
  - Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.

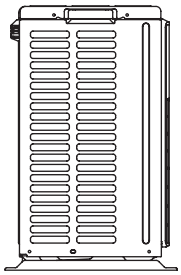
2. Dimensions

2-1. Models: AOEH07KNCA, AOEH09KNCA, and AOEH12KNCA

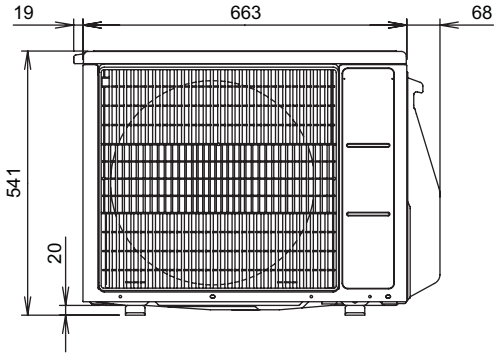
Unit: mm



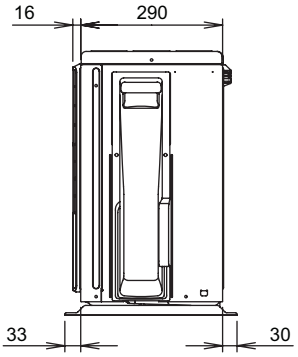
Top view



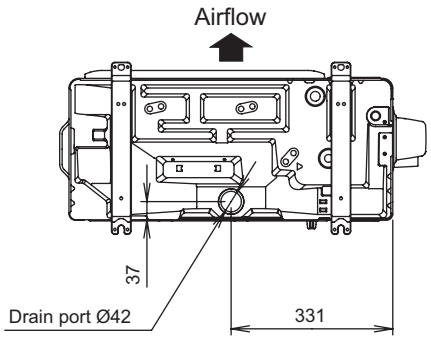
Side view



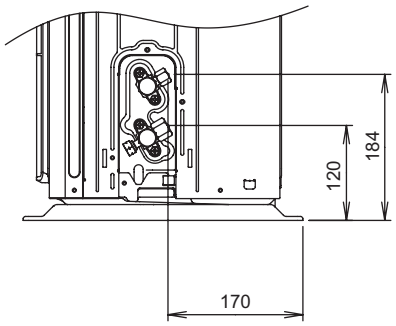
Front view



Side view



Bottom view



Side view (Valve part)

3. Installation space

3-1. Models: AOEH07KNCA, AOEH09KNCA, and AOEH12KNCA

OUTDOOR UNIT
AOEH07-12KNCA

■ Space requirement

Provide sufficient installation space for product safety.

⚠ CAUTION

Keep the space shown in the installation examples.

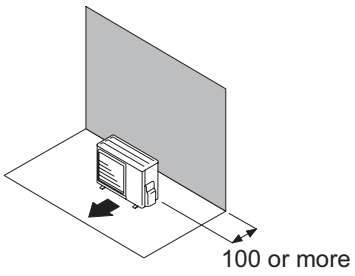
If the installation is not performed accordingly, it could cause a short circuit and result in a lack of operating performance.

● Single outdoor unit installation

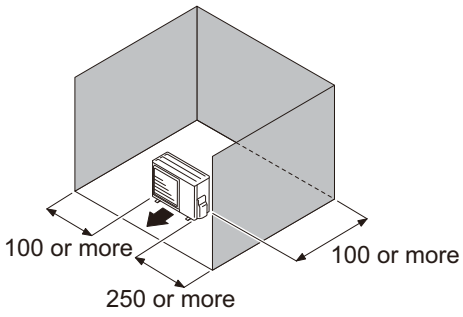
- **When the upper space is open:**

Unit: mm

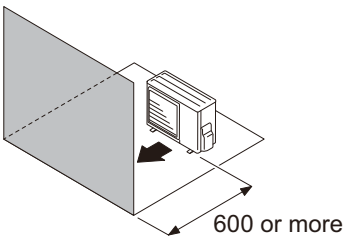
Obstacles at rear only



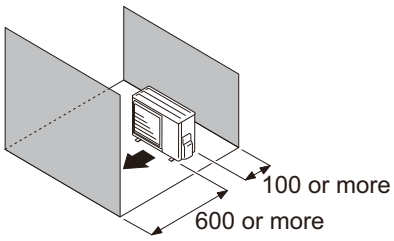
Obstacles at rear and sides



Obstacles at front



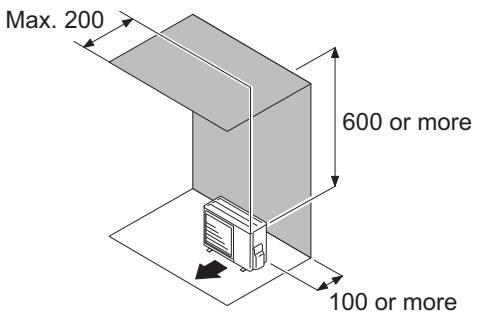
Obstacles at front and rear



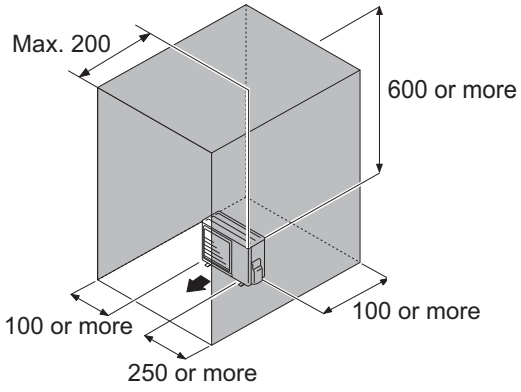
- **When an obstruction in the upper space:**

Unit: mm

Obstacles at rear and above



Obstacles at rear, sides, and above



OUTDOOR UNIT
AOEH07-12KNCA

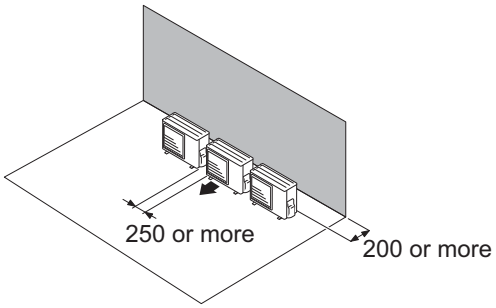
● Multiple outdoor unit installation

- Provide at least 250 mm of space between the outdoor units if multiple units are installed.
- When routing the piping from the side of an outdoor unit, provide space for piping.
- No more than 3 units must be installed side by side.
  When 4 units or more are arranged in a line, provide the space as shown in the following example "**When an obstruction in the upper space:**".

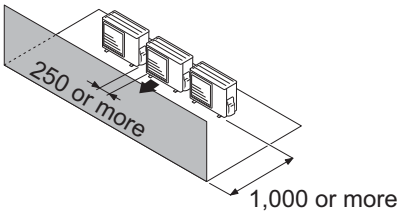
- **When the upper space is open:**

Unit: mm

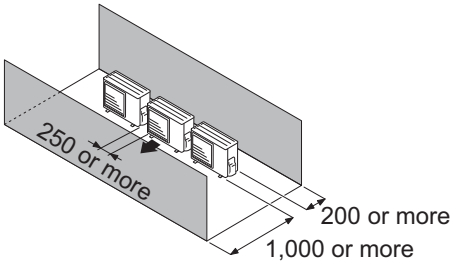
Obstacles at rear only



Obstacles at front only



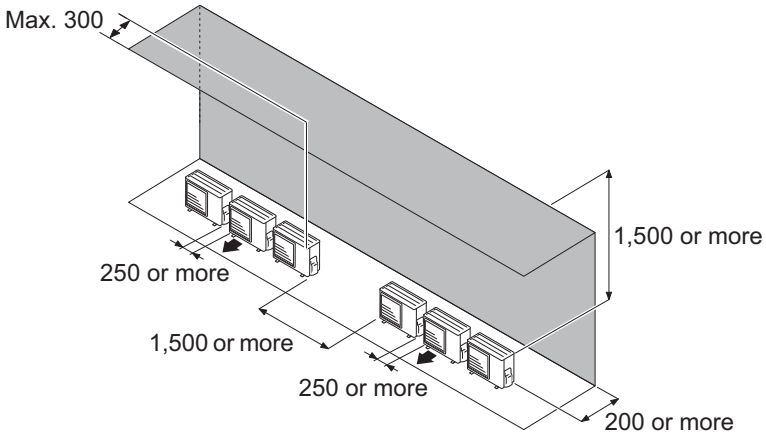
Obstacles at front and rear



- **When an obstruction in the upper space:**

Unit: mm

Obstacles at rear and above.

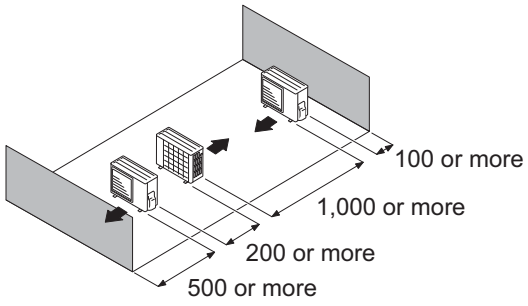


OUTDOOR UNIT
AOEH07-12KNCA

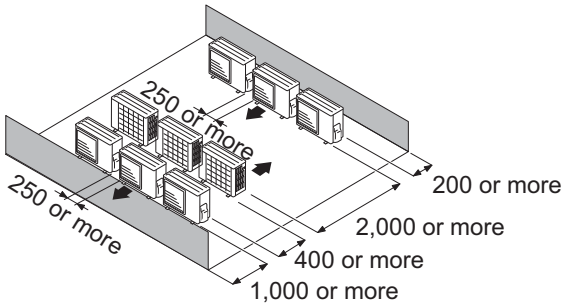
● Outdoor units installation in multi-row

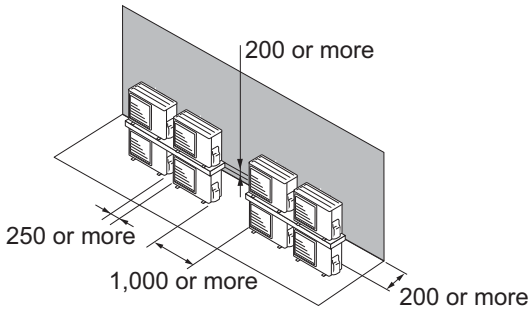
Unit: mm

Single parallel unit arrangement



Multiple parallel unit arrangement



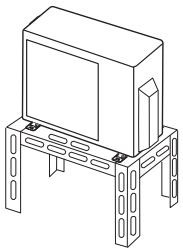


NOTES:

- If the space is larger than stated above, the condition will be the same as when there is no obstacle.
- When installing the outdoor unit, be sure to open the front and left side to obtain better operation efficiency.

⚠ CAUTION

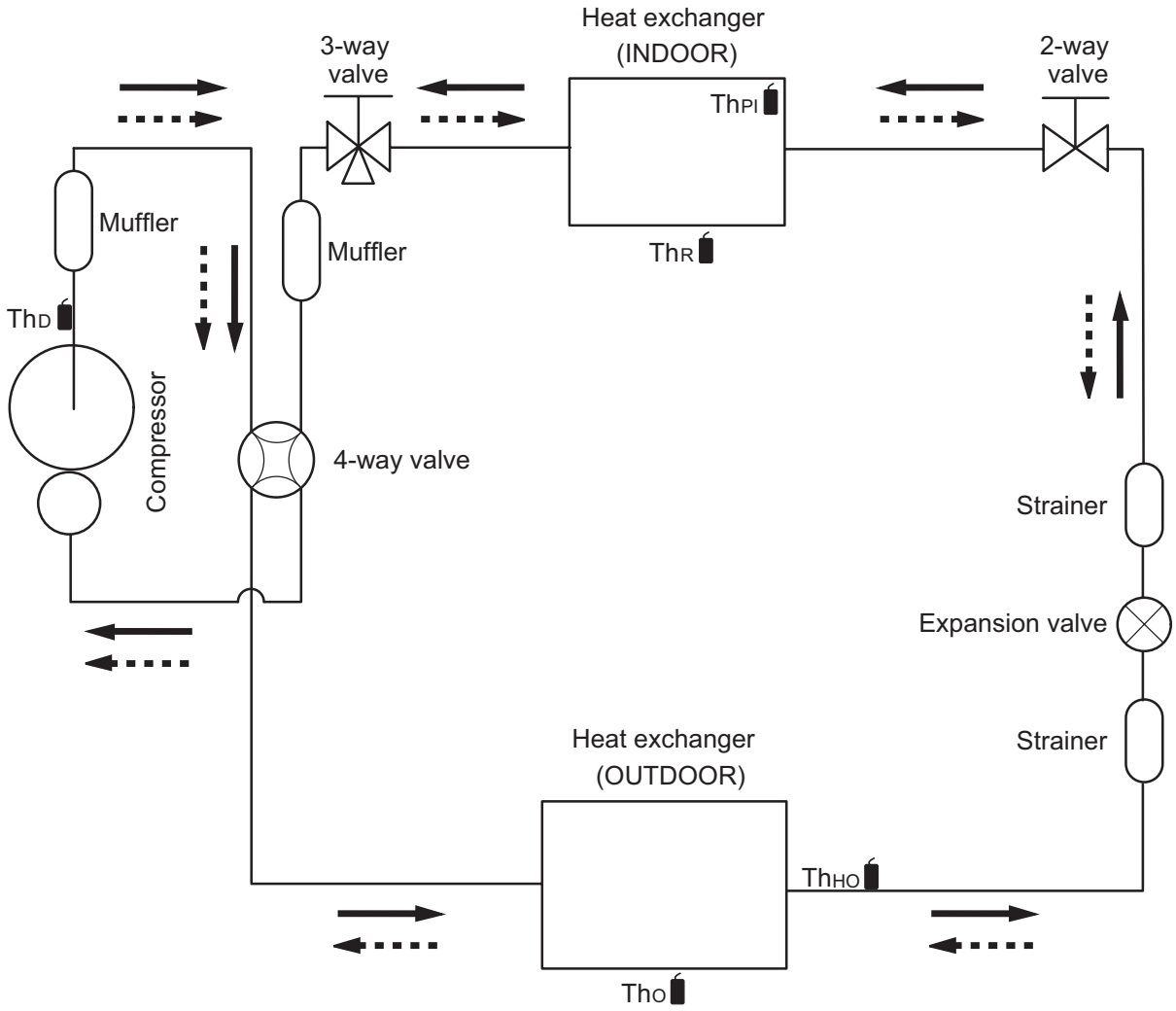
- Do not install the outdoor unit in two-stage where the drain water could freeze. Otherwise the drainage from the upper unit may form ice and cause a malfunction of the lower unit.
- When the outdoor temperature is 0 °C or less, do not use the accessory drain pipe and drain cap. If the drain pipe and drain cap are used, the drain water in the pipe may freeze in extremely cold climate. (For reverse cycle model only.)
- In area with heavy snowfall, if the inlet and outlet of the outdoor unit is blocked with snow, it might become difficult to get warm, and it is likely to cause product malfunction. Construct a canopy and a pedestal, or place the unit on a high stand that is locally installed.



OUTDOOR UNIT
AOEH07-12KNCA

4. Refrigerant circuit

4-1. Models: AOEH07KNCA, AOEH09KNCA, and AOEH12KNCA



ThD : Thermistor (Discharge temperature)

ThO : Thermistor (Outdoor temperature)

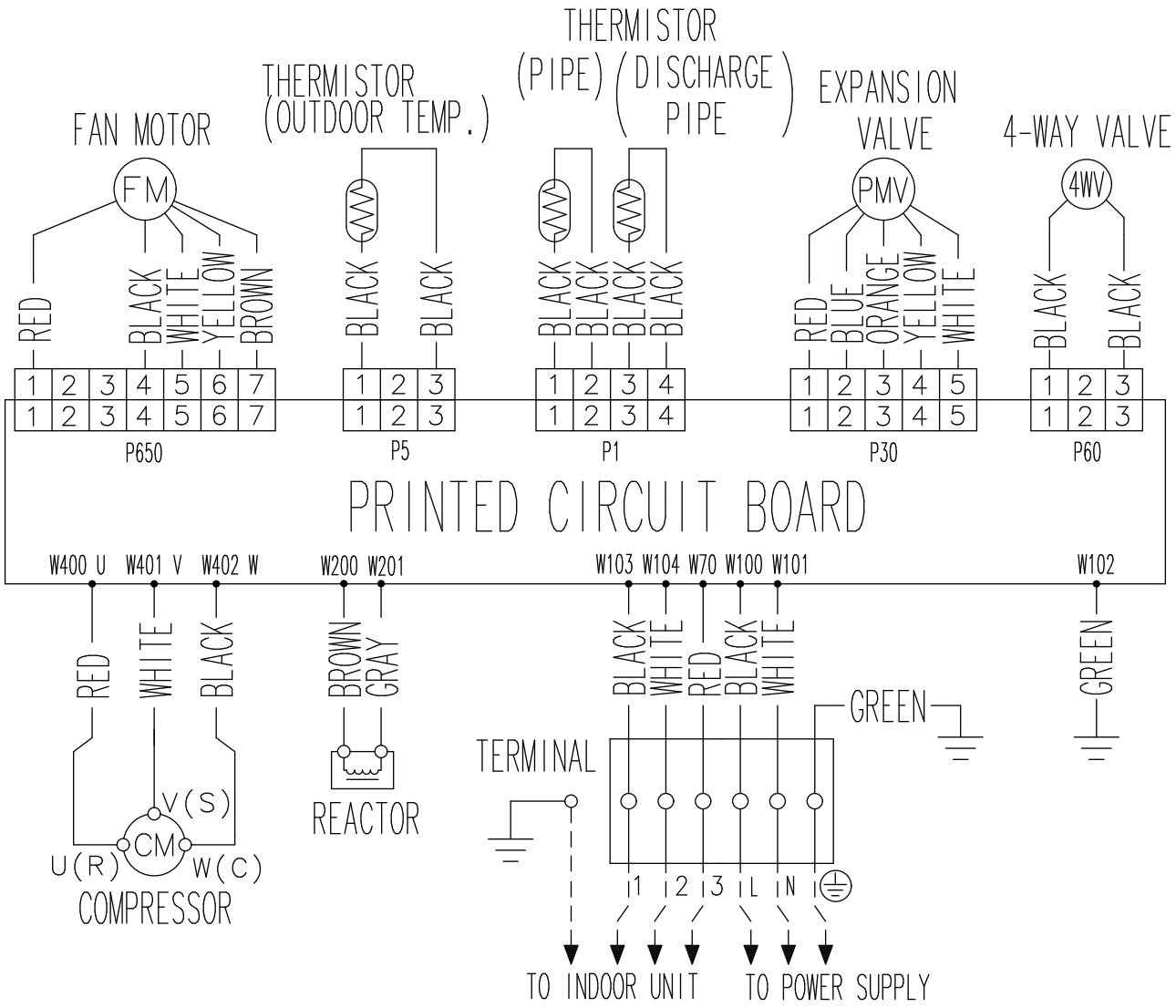
ThHO: Thermistor (Heat exchanger out temperature)

ThPI : Thermistor (Pipe temperature)

ThR : Thermistor (Room temperature)

5. Wiring diagrams

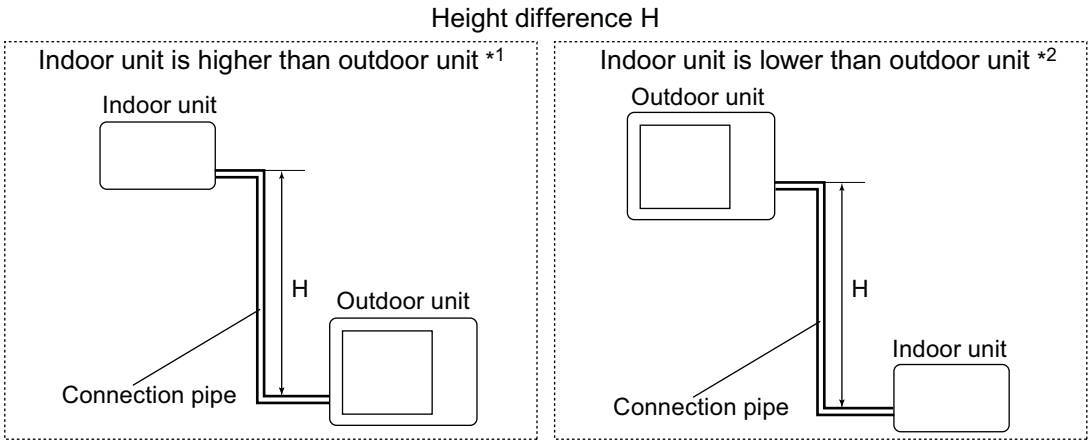
5-1. Models: AOEH07KNCA, AOEH09KNCA, and AOEH12KNCA



OUTDOOR UNIT
AOEH07-12KNCA

OUTDOOR UNIT
AOEH07-12KNCA

6. Capacity compensation rate for pipe length and height difference



6-1. Models: AOEH07KNCA, AOEH09KNCA, and AOEH12KNCA

NOTE: Values mentioned in the table are calculated based on the maximum capacity.

COOLING			Pipe length (m)				
			5	7.5	10	15	20
Height difference H (m)	Indoor unit is higher than outdoor unit *1	15	—	—	—	0.872	0.910
		10	—	—	0.961	0.886	0.925
		7.5	—	0.979	0.965	0.890	0.929
		5	0.992	0.983	0.969	0.893	0.933
		0	1.000	0.991	0.976	0.901	0.940
	Indoor unit is lower than outdoor unit *2	-5	1.000	0.991	0.976	0.901	0.940
		-7.5	—	0.991	0.976	0.901	0.940
		-10	—	—	0.976	0.901	0.940
		-15	—	—	—	0.901	0.940

HEATING			Pipe length (m)				
			5	7.5	10	15	20
Height difference H (m)	Indoor unit is higher than outdoor unit *1	15	—	—	—	0.832	0.822
		10	—	—	0.917	0.832	0.822
		7.5	—	0.961	0.917	0.832	0.822
		5	1.000	0.961	0.917	0.832	0.822
		0	1.000	0.961	0.917	0.832	0.822
	Indoor unit is lower than outdoor unit *2	-5	0.955	0.956	0.912	0.828	0.818
		-7.5	—	0.954	0.910	0.826	0.816
		-10	—	—	0.908	0.824	0.814
		-15	—	—	—	0.815	0.805

OUTDOOR UNIT
AOEH07-12KNCA

7. Additional charge calculation

7-1. Models: AOEH07KNCA and AOEH09KNCA

Refrigerant type		R32
Factory charge amount	g	570

■ Refrigerant charge

Total pipe length	m	15 or less	20 (Max.)	20 g/m
Additional charge amount	g	0	100	

7-2. Model: AOEH12KNCA

Refrigerant type		R32
Factory charge amount	g	650

■ Refrigerant charge

Total pipe length	m	15 or less	20 (Max.)	20 g/m
Additional charge amount	g	0	100	

OUTDOOR UNIT
AOEH07-12KNCA

8. Airflow

8-1. Model: AOEH07KNCA

● Cooling

m^3/h	1,430
l/s	397
CFM	842

● Heating

m^3/h	1,390
l/s	386
CFM	818

8-2. Model: AOEH09KNCA

● Cooling

m^3/h	1,430
l/s	397
CFM	842

● Heating

m^3/h	1,390
l/s	386
CFM	818

8-3. Model: AOEH12KNCA

● Cooling

m^3/h	1,460
l/s	406
CFM	859

● Heating

m^3/h	1,360
l/s	378
CFM	800

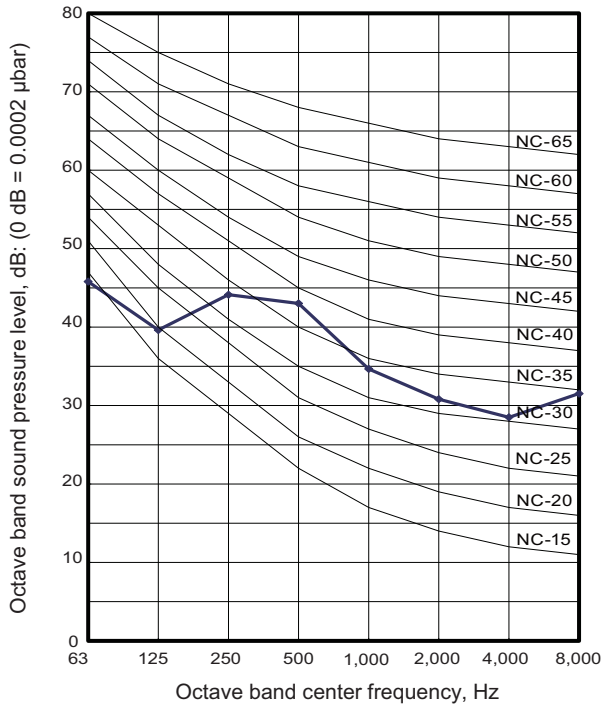
OUTDOOR UNIT
AOEH07-12KNCA

9. Operation noise (sound pressure)

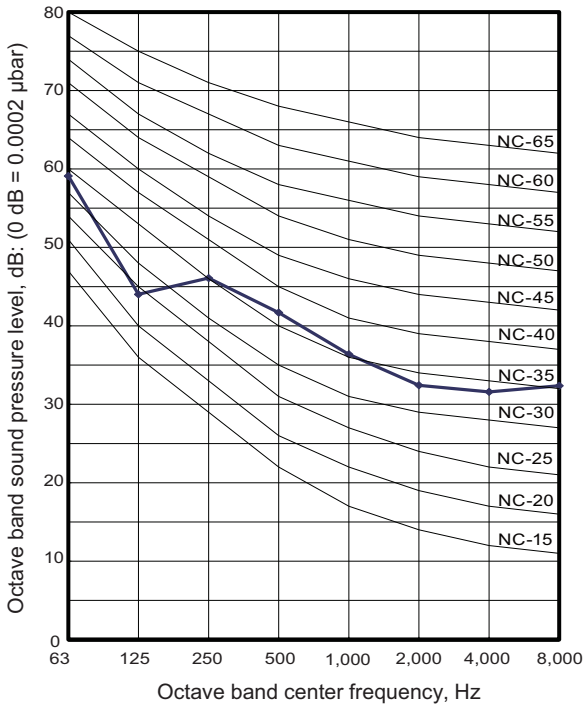
9-1. Noise level curve

■ AOEH07KNCA

● Cooling

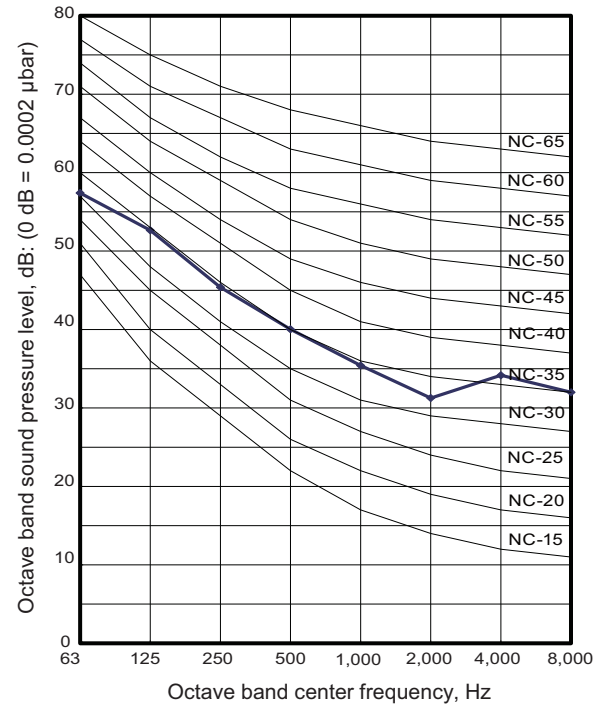


● Heating

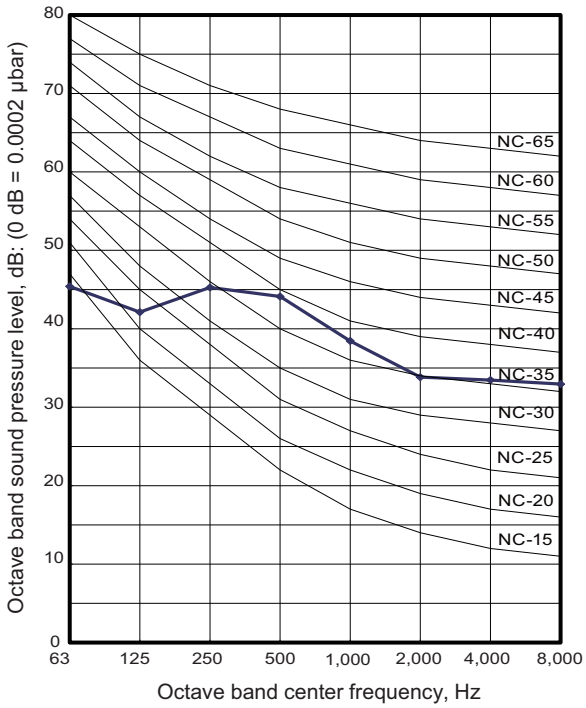


■ AOEH09KNCA

● Cooling



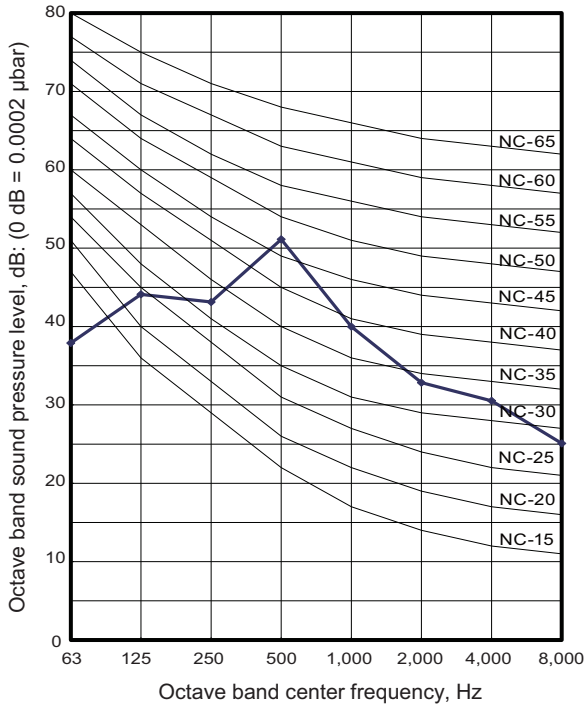
● Heating



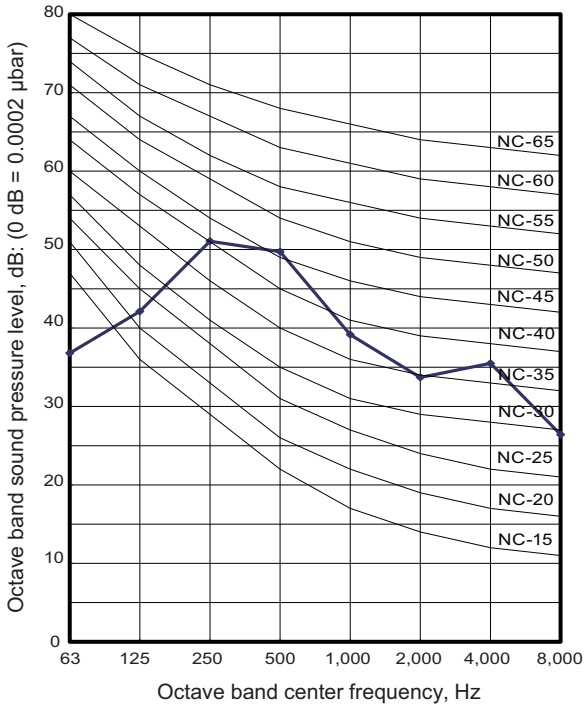
OUTDOOR UNIT
AOEH07-12KNCA

■ AOEH12KNCA

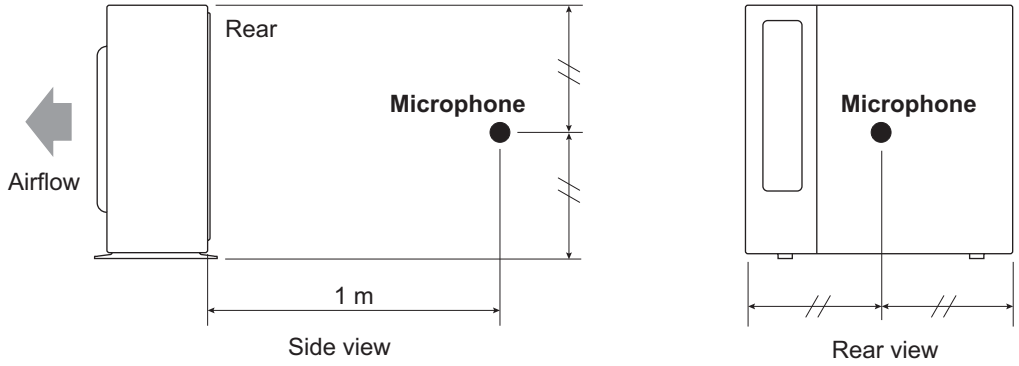
● Cooling



● Heating



9-2. Sound level check point



NOTE: Detailed shape of the actual outdoor unit might be slightly different from the one illustrated above.

OUTDOOR UNIT
AOEH07-12KNCA

10. Electrical characteristics

Model name				AOEH07KNCA	AOEH09KNCA	AOEH12KNCA
Power supply	Voltage		V	230		
	Frequency		Hz	50		
Max operating current*1			A	9.0		
Starting current			A	3.1	3.6	5.1
Wiring spec.*2	Circuit breaker current		A	10		
	Power cable		mm^2	1.5		
	Connection cable*3	Cross-sectional area	mm^2	1.5		
		Limited wiring length	m	21		

NOTES:

- *1: Maximum operating current is the total current of the indoor unit and the outdoor unit.
- *2: Selected sample based on Japan Electrotechnical Standards and Codes Committee E0005. As the regulations of wire size and circuit breaker differ in each country or region, select appropriate devices complied to the regional standard.
- *3: Limit voltage drop to less than 2%. If voltage drop is 2% or more, increase cable conductor size.

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11. Safety devices

Type of protection	Protection form		Model		
			AOEH07KNCA	AOEH09KNCA	AOEH12KNCA
Circuit protection	Current fuse (PCB*)		250 V, 20 A		
			250 V, 5 A		
Fan motor protection	Thermal protection program	Activate	85—122°C Fan motor stop		
		Reset	77—114°C Fan motor restart		
Compressor protection	Thermal protection program (Discharge temp.)	Activate	110°C Compressor stop		
		Reset	After 7 minutes Compressor restart		
	Thermal protection program (Outdoor temp.) (Only in COOL and DRY mode)	Activate	COOL or DRY: -15°C Compressor stop		
		Reset	COOL or DRY: -10°C Compressor restart		

*PCB: Printed Circuit Board

12. Accessories

12-1. Models: AOEH07KNCA, AOEH09KNCA, and AOEH12KNCA

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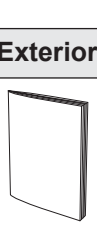
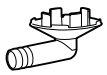
Part name	Exterior	Qty	Part name	Exterior	Qty
Installation manual		1	Drain pipe		1